

FIG 1A

AAV-1	ttgcccactccctctcgcgctcgctcgctcggtgggcctcgccggacaaagggtccgc	60
AAV-2	...g.....ac..a....g.gc.....gc.	60
AAV-6	...g.....ac..a....g.gc.....gc.	60
Rep binding site		
AAV-1	agacggcagagctctgcttgccggccaccgagcgagcgccgcagagaggagtg	120
AAV-2	c....c.c.g....t...c.g.g....t.....gt.....	120
AAV-6	c....c.c.g....t...c.g.g....t.....gt.....	120
TRS*		
AAV-1	ggcaactccatcacttagggtaaTCGCGAACGCCTCCACGCTGCCGCGTCAGCGCTGA	180
AAV-2	.c.....-..ct.G..G-----TG.A...G----...	163
AAV-6	.c.....-..ct.G..G-----TG.A...G----...	163
E box/USF		
AAV-1	CGTAAATTACGTCATAGGG---GAGTGGCCTGTATTAGCTGTCACGTGAGTGCTTTGC	237
AAV-2	...G.....TTA.G.A.....AG.....-	222
AAV-6	...G.....TTA.G.A.....AG.....-	222
YY1		
P5/TATA		
AAV-1	GACATTTGCGACACCACGTGGCCATTAGGGTATATGGCCGAGTGAGCGAGCAGGAT	297
AAV-2	.....T...T..CGCT.....T..A.C.....AC.....G.	282
AAV-6	.....T...T..CGCT.....T..A.C.....AC.....G.	282
YY1/p5 RNA		
Rep 78/68		
AAV-1	CTCCATTTGAC-CGCGAAATTGAACGAGCAGCAGCCATGCCGGCTTCTACGAGATCG	356
AAV-2	.....AG..G..GG.....C.....C.....G..T.....T.	342
AAV-6	.....AG..G..GG.....C.....-.....G..T.....T.	341
AAV-1	TGATCAAGGTGCCGAGCGACCTGGACGAGCACCTGCCGGCATTCCTGACTCGTTGTGA	416
AAV-2	....T....C..C.....T....G..T....C.....AGC.....	402
AAV-6	....T....C..C.....T....T....C.....AGC.....	401
AAV-1	GCTGGTGGCCGAGAAGGAATGGGAGCTGCCCGGATTCTGACATGGATCTGAATCTGA	476
AAV-2	A.....T....G..A.....	462
AAV-6	A.....T....G..A.....	461
AAV-1	TTGAGCAGGCACCCCTGACCGTGGCCGAGAAGCTGCAGCGCAGTCCTGGTCCAATGGC	536
AAV-2	.....T.....T....ACGG.....	522
AAV-6	.....T.....T....G.....	521
AAV-1	GCCGCGTGAGTAAGGCCCGGAGGCCCTTTCTTGTTCAGTCGAGAAGGGCGAGTCCT	596
AAV-2	....T.....T....G..A..T.....A..AG..	582
AAV-6	....T.....T....G..A..T.....A..AG..	581
AAV-1	ACTTCCACCTCCATATTCTGGTGGAGACCACGGGGTCAAATCCATGGTCTGGCCGCT	656
AAV-2	.....A.G..CG..G..C.....A.....C.....G.....TT....A..T..	642
AAV-6	.....A.....C.....G.....TT....A..T..	641
AAV-1	TCCTGAGTCAGATTAGGGACAAGCTGGTGCAGACCATCTACCGCGGGATCGAGCCGACCC	716
AAV-2	.....C.C..A..A..A..T..GA..T.....TT	702
AAV-6	.....A.....C.....G.....TT....A..T..	701
AAV-1	TGCCCAACTGGTCGCGGTGACCAAGACGCGTAATGGCGCCGGAGGGGGAAACAAGGTGG	776
AAV-2	....A.....C..A.....CA..A.....C.....	762
AAV-6	....A.....C.....G.....TT....A..T..	761

FIG 1B

AAV-1	TGGACGAGTGCTACATCCCCA ACTACCTCCTGCCAAGACTCAGCCC GAGCTGCAGTGGG	836
AAV-2	....T.....T...T.G..C....A..C....T....C.....	822
AAV-6	.....	821
	P19/TATA	P19 RNA
AAV-1	CGTGGACTAACATGGAGGAGTATATAAGCGCCTGTTGAACCTGGCCGAGCGCAAACGGC	896
AAV-2	.....T....AC....T.....C....G..T..CA.G....T.....T	882
AAV-6	.....C....GG....A....G....A..C..GG.C.....	881
AAV-1	TCGTGGCGCAGCACCTGACCCACGTCA GCCAGACCCAGGAGCAGAACAGGAGAA ATCTGA	956
AAV-2	.G.....T....G....GTCG....G.....A.....A..	942
AAV-6	.....CG.....	941
	Rep 52/40	
AAV-1	ACCCCAATTCTGACGCGCCTGTCATCCGGTCAAAA ACCTCCGCGCCTACATGGAGCTGG	1016
AAV-2	.T.....T....G..G..A.A.....T..A..CA.G.....	1002
AAV-6	.....	1001
AAV-1	TCGGGTGGCTGGTGGACC GGGGCATCACCTCCGAGAAC GAGCAGTGGATCCAGGAGGACCAGG	1076
AAV-2	.....C.....AA..G..T.....G.....	1062
AAV-6	.....	1061
AAV-1	CCTCGTACATCTCCTTCA ACGCCGCTTCAACTCGCGTCCC AGATCAAGGCCGCTCTGG	1136
AAV-2	....A.....T..G..C.....A.....T..CT...	1122
AAV-6	.....	1121
AAV-1	ACAATGCCGGCAAGAT CATGGCGCTGACCA AAATCCGCGCCGACTAC CTGGTAGGCCCG	1196
AAV-2	.....G..A.....T..AGC.....T..A..C.....G...AGC	1182
AAV-6	.....	1181
AAV-1	CTCCGCCCGGGACATT AAAACCAACCGC ATCTACCGC ATCCTGGAGCTGA ACGGCTACG	1256
AAV-2	AG..CGTG.A.....TCC.G...T..G..T..TAAA..TT.....A..A.....G....	1242
AAV-6	.....C.....T.....	1241
AAV-1	AACCTGCCTACGCC GGCTCCGTCTTCT CGGCTGGGCCAGAAA AGGTTGGGAAGCGCA	1316
AAV-2	.T..CCAA..T..G.CT.....G..A.....AC.....A.....C..A.G.	1302
AAV-6	..C.....	1301
AAV-1	ACACCATCTGGCT TTGGGCCACCACGG CAAGACCAACATCG CGGAAGCCATCG	1376
AAV-2	.....T..A..T..C..G.....G.....A.	1362
AAV-6	.....	1361
AAV-1	CCCACGCCGTGCC CTTCTACGGCT GCGTCAACTGG ACCAATGAGAAC TTCCCTTAATG	1436
AAV-2	.....A.T.....G.....A.....	1422
AAV-6	.....	1421
AAV-1	ATTGCGTCGACA AGATGGT GATCTGGT GGGAGGG CAAGATGAC GGCCAAGGT CGTGG	1496
AAV-2	..C..T.....G.....C.....	1482
AAV-6	.....	1481
AAV-1	AGTCCGCCAAGGCC ATTCTCGGCG CAGCAAGGT GCGCGTGG ACCAAAAGT GCAAGTCGT	1556
AAV-2	....G.....A.....A..A.....G..A.....C.	1542
AAV-6	.....	1541
AAV-1	CCGCC CAGATCGAC CCCCAC CCCCGT GATCGT CACCTCA ACACCA ACATGT GCGCCGTGA	1616
AAV-2	..G.....A.....G..T.....	1602
AAV-6	.....T.....	1601

FIG 1C

AAV-1	TTGACGGAACAGCACCACTTCGAGCACAGCAGCCGTTGCAGGACCGATGTTCAAAT	1676
AAV-2	.....TCA..G.....A.....A.....A.....	1662
AAV-6	.....	1661
AAV-1	TTGAACTCACCGCCGTCTGGAGCATGACTTGGCAAGGTGACAAAGCAGGAAGTCAAAG	1740
AAV-2	.....T.....G.....C..C.....	1722
AAV-6	.....	1721
AAV-1	AGTTCTCCGCTGGCGCAGGATCACGTGACCGAGGTGGCGCATGAGTTCTACGT CAGAA	1796
AAV-2	.C..T.....G.....AA.....GTT.....A.....A.....A..	1782
AAV-6	.....	1781
P40/TATA		
AAV-1	AGGGTGGAGCCAACAAAAGACCCGCCCGATGACGCGGATAAAAGCGAGGCCAAGCGGG	1856
AAV-2	.....G.....AG.....A....T....T.....A....	1842
AAV-6	.....G.....	1841
P40 RNA		
AAV-1	CCTGCCCTCAGTCGCGGATCCATCGACGT CAGACGCGGAAGGAGCTCCGGTGGACTTG	1916
AAV-2	TGC..GAG.....T..C.G.....---.T..A.CA...AC.	1899
AAV-6	.....	1901
▼		
AAV-1	CCGACAGGTACCAAAACAAATGTTCTCGTCACGCCGGCATGCTTCAGATGCTGTTCCCT	1976
AAV-2	.A.....T.....AA..T.....	1959
AAV-6	.....	1961
AAV-1	GCAAGACATGCGAGAGAATGAATCAGAACATTCAACATTGCTTACGCACGGGAGAG	2036
AAV-2	...GACA.....CA..T..C.....T.....ACA..A..	2019
AAV-6	...A.....C....	2021
AAV-1	ACTGTT CAGAGTGCTTCCCCGGCGTGT CAGAACATCTCAACCGGT C--GTCAGAAAGAGGA	2093
AAV-2	.....T.....T...---.....C..TTCT..GTC..A.A.G	2076
AAV-6	.....A..T.....---	2078
AAV-1	CGTATCGAAACTCTGTGCCATT CATCTGCTGGGGCGGGCTCCGAGATTGCTTGCT	2153
AAV-2	.....A.....G..CTA.....A.CA....AAA..TG..A..---C.....A	2133
AAV-6	.....	2138
Rep 78 stop		
AAV-1	CGGCCTGCGATCTGGTCAACGTGGACCTGGATGACTGTGTTCTGAGCAATAATGACTT	2213
AAV-2	.T.....T.....CA.C.T..A.....T..	2193
AAV-6	.....T.....	2193
▽ VP1		
AAV-1	AAACCAGGTATGGCTGCCGATGGTTATCTTCCAGATTGGCTCGAGGACAACCTCTGAG	2273
AAV-2	...T.....	2253
AAV-6	.....	2258
▽ Rep 68 stop		
AAV-1	GGCATT CGCAGTG GTGG GACTT GAAAC CTGGAG CCCC GAAG CCC AAG CCA ACC AG CAA	2333
AAV-2	..A..AA.AC.....A.GC.C.....CC.A..ACCA..A..GC..GCAG...GG	2313
AAV-6	.....A.....	2318
AAV-1	AAGCAGGACGACGGCCGGGTCTGGTGCTT CCTGGCTACAAGTACCTCGGACCC TCAAC	2393
AAV-2	C.TA.....A..A.....T.....G.....	2373
AAV-6	.....G..C.....G.....C.....	2378

FIG 1D

AAV-1	GGACTCGACAAGGGGGAGCCGTCAACGCGGGACGCAGCGGCCCTCGAGCACGACAAG	2453
AAV-2	.....A.....G.....A.....A.....C.....A	2433
AAV-6	.....T.....T.....T.....T.....T.....T	2438
AAV-1	GCCTACGACCAGCAGCTCAAAGCGGGTACAATCCGTACCTGCGGTATAACCACGCCGAC	2513
AAV-2	.....G.....G.CAGC..A.....C.....CAA..C.....A	2493
AAV-6	.....A.AGCG..T.....T.....GCG..T.....G	2498
AAV-1	GCCGAGTTTCAGGAGCGTCTGCAAGAAGATACTCTTTGGGGCAACCTCGGGCGAGCA	2573
AAV-2	..G.....C..TA.....A.....A.....A	2553
AAV-6	..C.....T..GC.....G.....G	2558
AAV-1	GTCTTCCAGGCCAAGAACGGGTTCTGAACCTCTCGGTCTGGTGAGGAAGGCCTAAG	2633
AAV-2	.....G..A..A.....T.....G..C.....CCT..T....A	2613
AAV-6	.....A.....T..T.....T.....T	2618
VP2		
AAV-1	ACGGCTCCTGGAAAGAAACGTCCGGTAGAGCAGTCGCCACAAGAGCCAGACTCCTCCTCG	2693
AAV-2	.....G.....A..GA.G.....C..T..TGTG.....G	2673
AAV-6	.....T.....G..AC.T.....G..G..ACAA.....G	2678
AAV-1	GGCATCGGCAAGACAGGCCAGCAGCCCCTAAAAAGAGACTCAATTGGTCAGACTGGC	2753
AAV-2	..A.C..A..G.G.....T..A.G..A..T.G.....A	2733
AAV-6	.....T.....T.....T.....A	2738
AAV-1	GACTCAGAGTCAGTCCCCGATCCACAAACCTCTCGGAGAACCTCCAGCAACCCCCGCTGCT	2813
AAV-2	...G....C....A..T..C..C..G.....C.G..A.....G....T..G..G	2793
AAV-6	...T....G....C..C..C..A..A.....G.A..T.....A....G.....G	2798
VP3		
AAV-1	GTGGGACCTACTACAATGGCTTCAGGCAGTGGCGCACCAATGGCAGACAATAACGAAGGC	2873
AAV-2	C.....A..A..G.....A.....A.....G..	2853
AAV-6	.....T.....T.....T.....G	2858
AAV-1	GCCGACGGAGTGGTAATGCCTCAGGAAATTGGCATTGCGATTCCACATGGCTGGCGAC	2933
AAV-2	.....T.....C.....A.....A.....A	2913
AAV-6	.....T.....T.....T.....A	2918
AAV-1	AGAGTCATCACCACCAGCACCGCACCTGGCCTTGCCCACCTACAATAACCACCTCTAC	2993
AAV-2	.....A.....C.....C.....C	2973
AAV-6	.....A..A.....T..C.....T..C	2978
AAV-1	AAGCAAATCTCCAGTGCTTCAACGGGGGCCAGCAACGACAACCACTACTCGGCTACAGC	3053
AAV-2	..A.....T.....CAA..---..A..TCG.....T.....T	3030
AAV-6	.....T.....T.....T.....A	3038
AAV-1	ACCCCCTGGGGTATTTGATTCAACAGATTCCACTGCCACTTTCACCACTGTGACTGG	3113
AAV-2	....T.....C.....T.....C	3090
AAV-6	.....T..C.....T..C.....T..C	3098
AAV-1	CAGCGACTCATACAACAATTGGGATTCCGGCCCAAGAGACTCAACTCAAACCTCTTC	3173
AAV-2	..AA.....C.....A.....G.....T	3150
AAV-6	.....G.....G.....G.....G	3158
AAV-1	AACATCCAAGTCAAGGAGGTACGACGAATGATGGCGTCACAACCACCGCTAATAACCTT	3233
AAV-2	.....T.....A.....CA.....C..TACG..G..G..T..C.....G	3210
AAV-6	.....G.....G.....G.....G	3218

FIG 1E

AAV-1	ACCAGCACGGTTCAAGTCTTCGGACTCGGAGTACCAAGCTTCCGTACGTCCCTCGGCTCT	3293
AAV-2	.....G..G..TA.T.....C.....G	3270
AAV-6	.....T.G.....	3278
AAV-1	GCGCACCAAGGGCTGCCTCCCTCCGTTCCGGGACGTGTTCATGATTCCGCAATACGGC	3353
AAV-2	....T.A.A.....G.....A.A.....C.....G.G.A.G.T.A	3330
AAV-6	.....G.....	3338
AAV-1	TACCTGACGCTAACAAATGGCAGCCAAGCCGTGGGACGTTACCTCTTACTGCCTGGAA	3413
AAV-2	...C..C..G.....C..G..T..A..A..A.....C..T..A.....G	3390
AAV-6	...A.....G.A.....G	3398
AAV-1	TATTCCTTCTCAGATGCTGAGAACGGCAACAACCTTACCTTCAGCTACACCTTGAG	3473
AAV-2	.C..T.....C.T..C..A.....T.....T	3450
AAV-6	....A..G.....T.....C..	3458
AAV-1	GAAGTGCCTTCCACAGCAGCTACGCGCACAGCCAGAGCCTGGACCGGCTGATGAATCCT	3533
AAV-2	.C..T.....T.....T.....T..C.....	3510
AAV-6	..C.....	3498
AAV-1	CTCATCGACCAATACCTGTATTACCTGAACAGAACTCAAATCAGTCCGGAAGTGCCCAA	3593
AAV-2	.....G.....T..G.....AA.C.C..CAAGT...CCA..ACG	3570
AAV-6	.....G.....G.....	3578
AAV-1	AACAAGGACTTGCTGTTAGCCGTGGGTCTCCAGCTGGCATGTCTGTTCAGCCCCAAAAC	3653
AAV-2	C.GTCAAGGC.T.A....TCT.AG.CCGGAG.GAG..A..TCGG.AC...T.T.GG...	3630
AAV-6	.....G.....	3638
AAV-1	TGGCTACCTGGACCCTGTTATCGGCAGCGCGCTTCTAAAACAAAAACAGACAACAAAC	3713
AAV-2	....T.....C..C.....A..A.C.A..G..TCTG.G..T.....	3690
AAV-6	.....C.....	3698
AAV-1	AACAGCAATTACCTGGACTGGTGCTTCAAAATATAACCTCAATGGCGTGAATCCATC	3773
AAV-2	....TG.A.ACT.G.....A..A.C..G..CC.....CA.A..C..TC.G	3750
AAV-6	....C.....T.....T..A	3758
AAV-1	ATCAACCTGGCACTGCTATGGCCTCACACAAAGACGAAGACAAGTTCTTCCATG	3833
AAV-2	G.G..T..G..GC.C..C.....AAGC.....G.....T.....A.....T.....TCA.	3810
AAV-6	.....A.....	3818
AAV-1	AGCGGTGTCATGATTTGGAAAAGAGAGCGCCGGAGCTCAAACACTGCATTGGACAAT	3893
AAV-2	....G..TC.C..C.....G..GC..AG..T..A..AGAAA....TGTGAACA.T..A..G	3870
AAV-6	.....G.....	3878
AAV-1	GTCATGATTACAGACGAAGAGGAAATTAAAGCCACTAACCTGTGGCCACCGAAAGATT	3953
AAV-2	.....CGG.A.A..C..T..C.....T..G..GCAG.A.	3930
AAV-6	....C.....C.....C	3938
AAV-1	GGGACCGTGGCAGTCAATTCCAGAGCAGCACAGACCCTGCGACCGGAGATGTGCAT	4013
AAV-2	..TT.T..AT.TAC..CC.....AG..A..G.C.AG.A..T..C.....CA.C	3990
AAV-6	....T.....C.....	3998
AAV-1	GCTATGGGAGCATTACCTGGCATGGTGTGGCAAGATAGAGACGTGTACCTGCAGGGTCCC	4073
AAV-2	A.ACAA..C.TTC.T..A.....C.....G..C.....T.....T.....G..	4050
AAV-6	T.....C.....A.....C.....A.....T	4058

FIG 1F

AAV-1	ATTTGGGCCAAAATTCTCACACAGATGGACACTTCACCCGCTCCTCTTATGGCGGC	4133
AAV-2	..C.....A..G.....A.....G..C.....T.....C.....C..C.....T..A	4110
AAV-6	.....G.....G.....C.....C.....	4118
AAV-1	TTTGGACTCAAGAACCCGCCTCCTCAGATCCTCATCAAAACACGCCTGTTCTGCGAAT	4193
AAV-2	..C.....T..AC....T.....A.....T.....G.....C..G..A.....	4170
AAV-6	.....T..C.....	4178
AAV-1	CCTCCGGCGGAGTTTCAGCTACAAAGTTGCTTCATCATCACCAAACTCCACAGGA	4253
AAV-2	..T..A.CACC..CAGT..GG.....C.....A..G.....G...	4230
AAV-6	.....A.....G.....G..T.....	4238
AAV-1	CA-AGT GAGT GTGGAAATTGAATGGGAGCTGCAGAAAGAAAACAGCAAGCGCTGGAATCC	4312
AAV-2	..CG..C..C.....G..C..G.....G.....A.....A.....	4290
AAV-6	...-.....C.....G.....A.....	4297
AAV-1	CGAAGTGCAGTACACATCCAATTATGCCAA-CTGCCAA-CGTTGATTTACTGTGGACA	4371
AAV-2	....A.T.....T.....C..CAAC..G....TT..T....G..C.....C.....T.	4350
AAV-6	.....T.....T..C.....-.....C.....	4356
AAV-1	ACAATGGACTTTACTGAGCCTGCCCATGGCACCCGTTACCTTACCCGTCCCCTGT	4431
AAV-2	CT.....CG.G...T.A.....A.A.....G..T..AAT....	4410
AAV-6	.....C.....	4416
VP1-3 stop PolyA signal		
AAV-1	AATTACGTGTTAATCAATAACCGGTTGATTGTTCAAGTTGAACCTTGCTCCTGTCC	4491
AAV-2	....G.T.....T..A.....	4470
AAV-6	....GT.....A.....G.....A....G	4476
AAV-1	TTCTTATCTTATC-GGTTACCATGGTTAT-AGCTTACACATTA--ACTGCTTGGTTGCGC	4547
AAV-2	..TC.T.....TA..T.....C..CGTAGA..AGT..GC..TGG..G..G..AA..CATTA	4530
AAV-6	..A.....T..C.....A..CA..C-C..G.....-.....A.....	4533
AAV-1	TTCGCGATAAAAGACTTACGTCACTGGGttacccttagtgatggagttgccactccctc	4607
AAV-2	ACTA..A..gg..a-----g.....	4570
AAV-6	.....at-----	4572
AAV-1	tctgcgcgctcgctcgctcggtggggccggcagagcagagctctgccgtctcgacacctt	4667
AAV-2	..c.....ac..a.....gc..c..a..g..gc..a..gc..c..gg..	4630
AAV-6	..a.....g.....	4632
AAV-1	tggtccgcaggccccaccgagcgagcgagcgccagagaggagtgccaa	4718
AAV-2	..cc..g..gc....t..gt.....c...	4681
AAV-6	.....t.....	4683

AAV-1 TR

The diagram illustrates the structure of the AAV-1 genome. It shows a single-stranded DNA molecule with inverted terminal repeats (ITR) at both ends. The sequence is labeled as "aav-1 itr". The genome is divided into regions labeled "a" and "t". The sequence starts with "A" and ends with "T". Key features include the inverted repeats, internal repeats, and specific restriction enzyme cleavage sites.

FIG 2

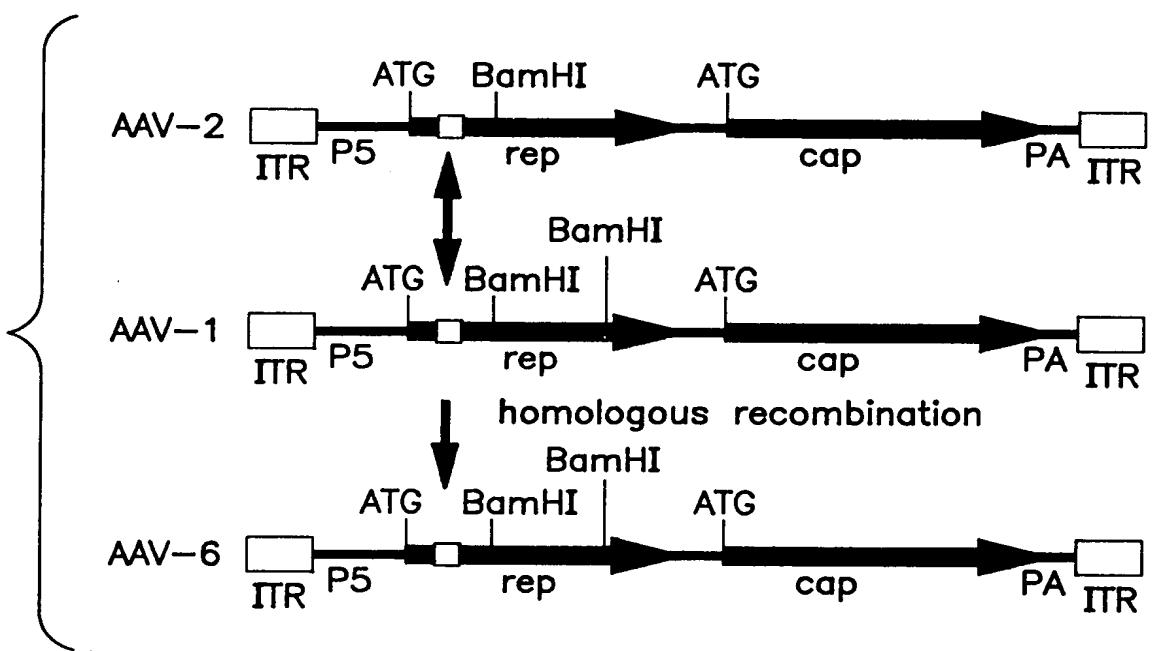


FIG. 3A

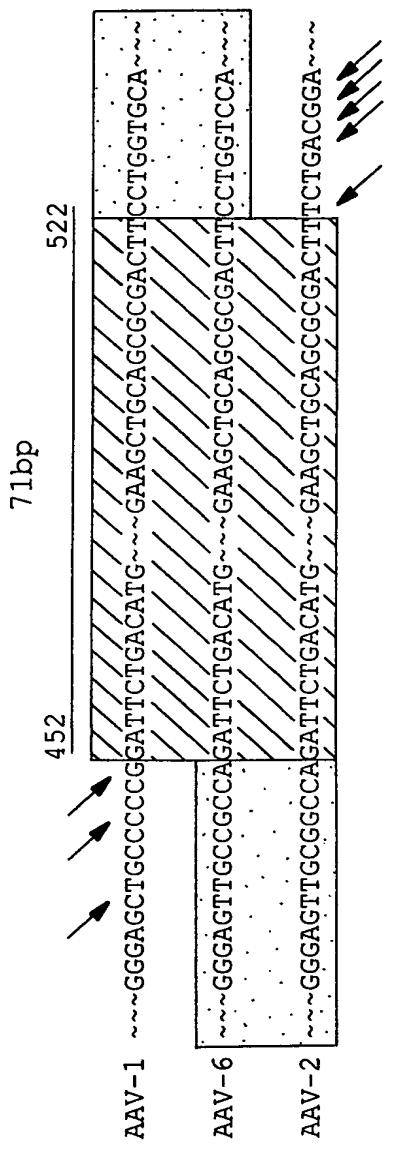


FIG. 3B

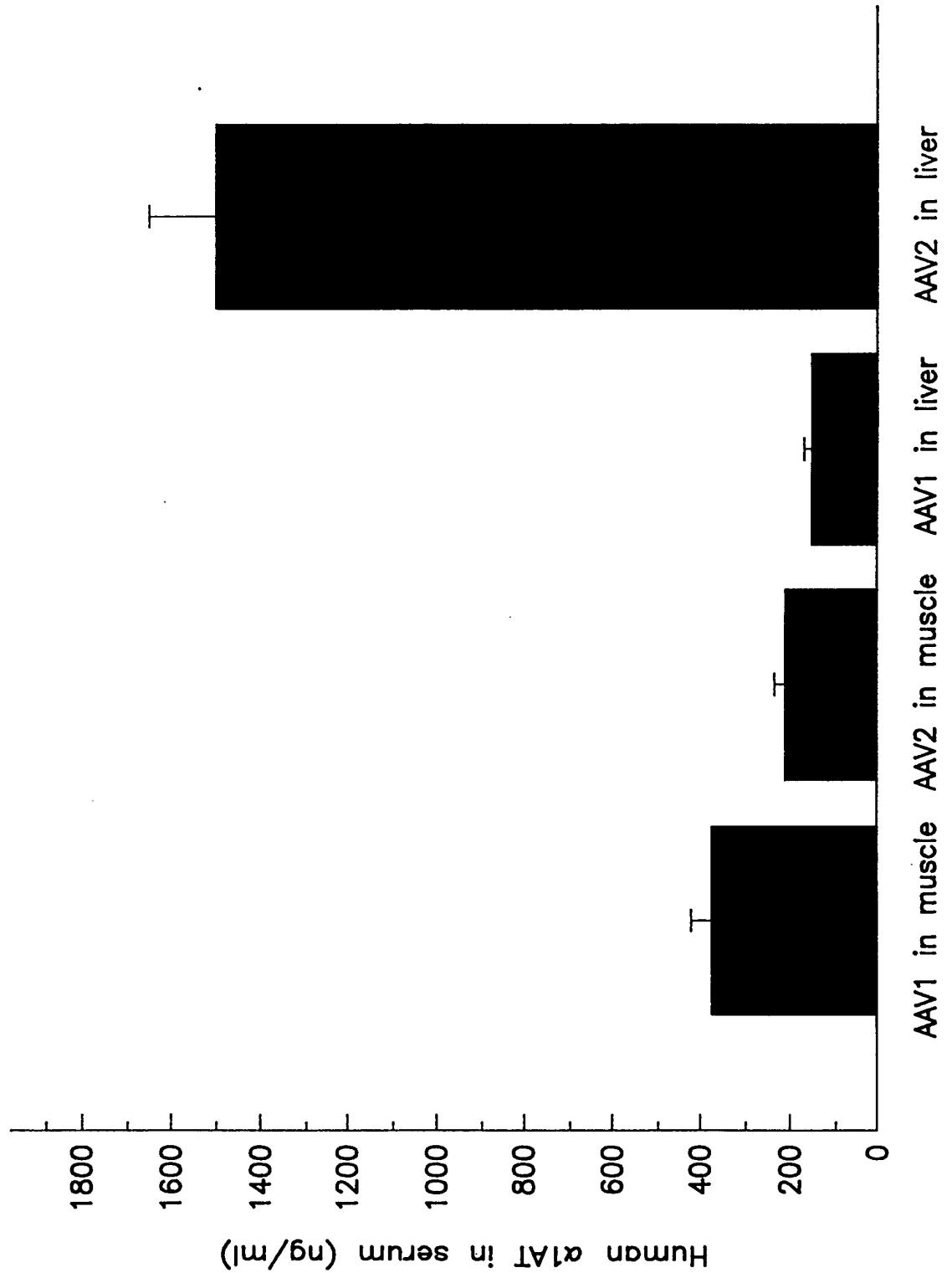


FIG. 4A

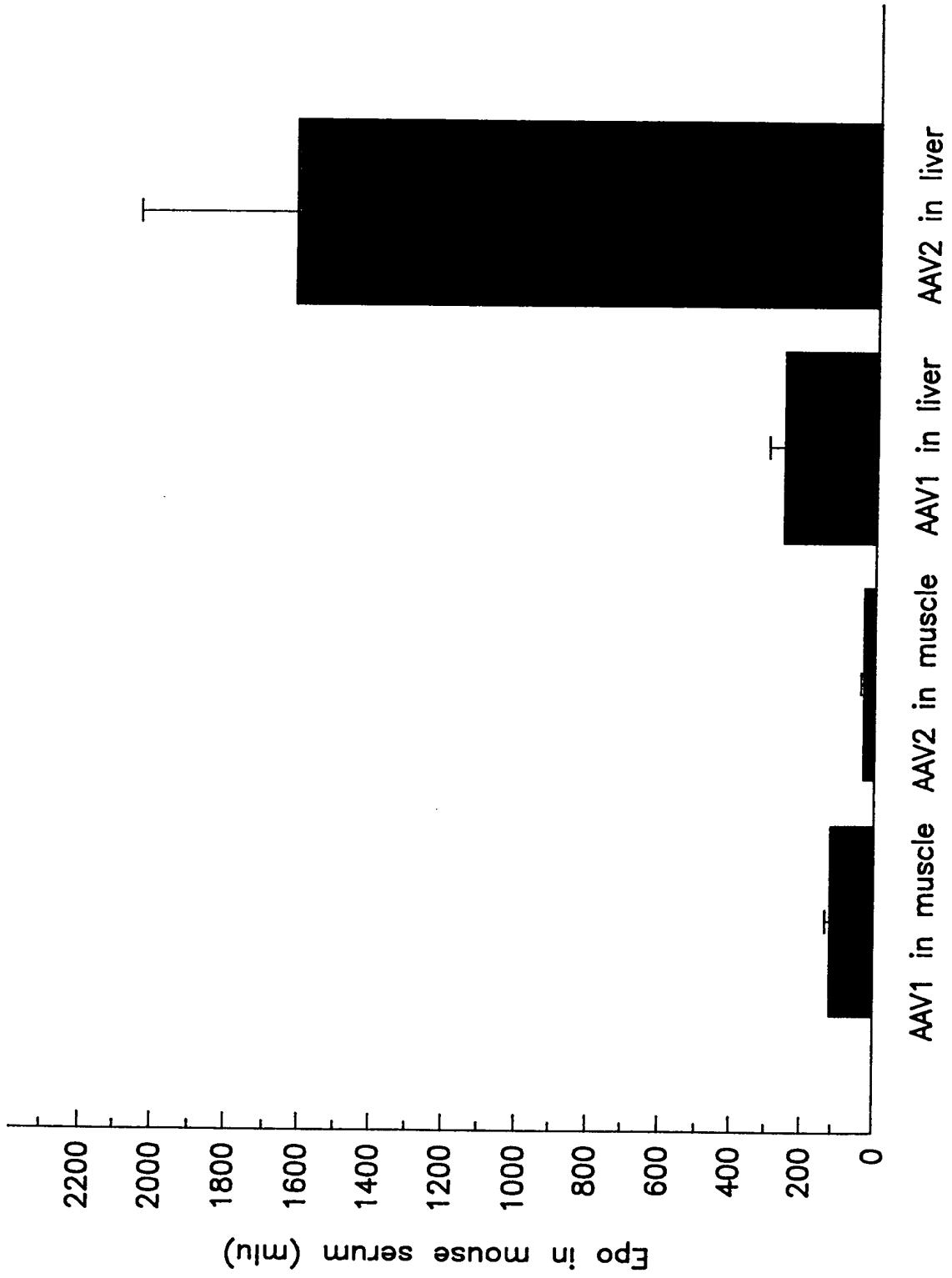


FIG. 4B

FIG. 5A

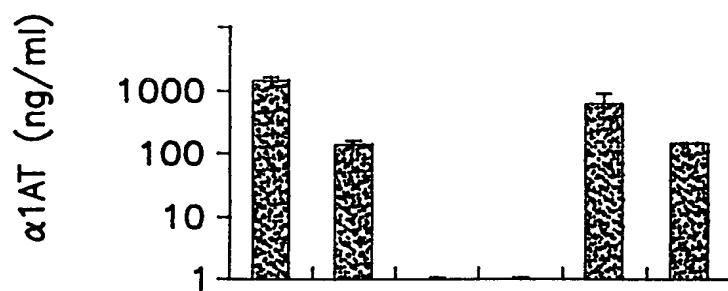


FIG. 5B

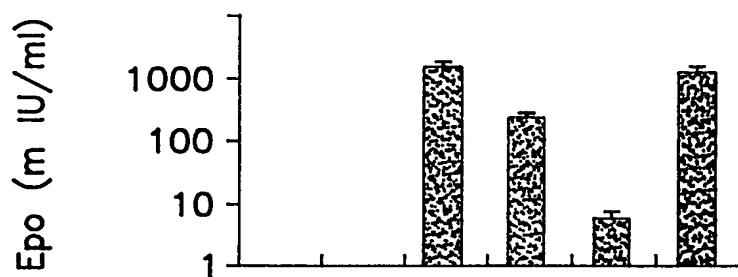


FIG. 5C

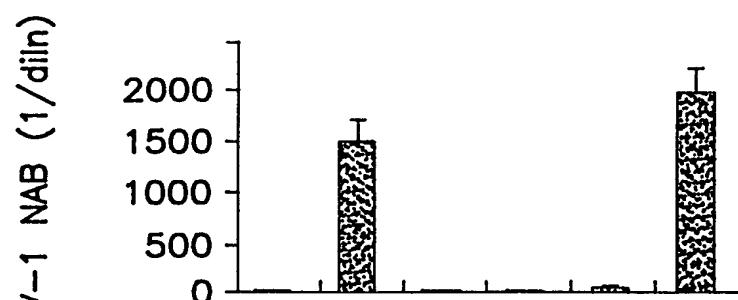
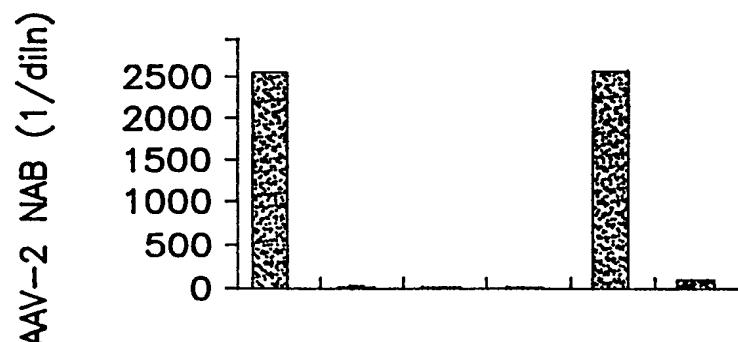


FIG. 5D



Group	1	2	3	4	5	6
Vector1- α 1AT	AAV2	AAV1	PBS	PBS	AAV2	AAV1
Vector2-EPO	AAV2	AAV1	AAV2	AAV1	AAV1	AAV2

FIG. 6A

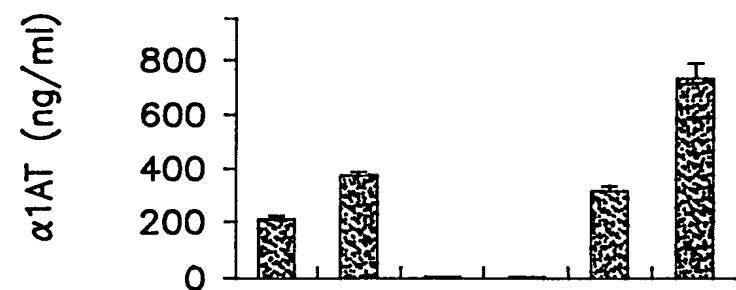


FIG. 6B

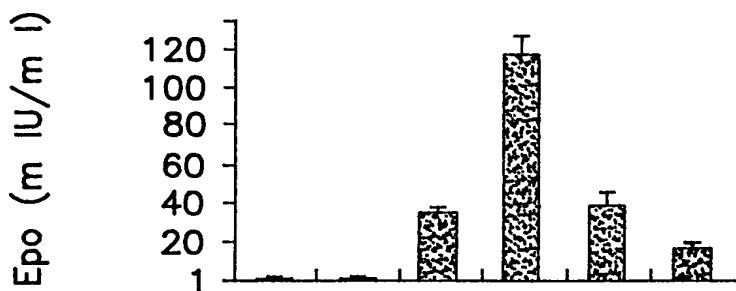


FIG. 6C

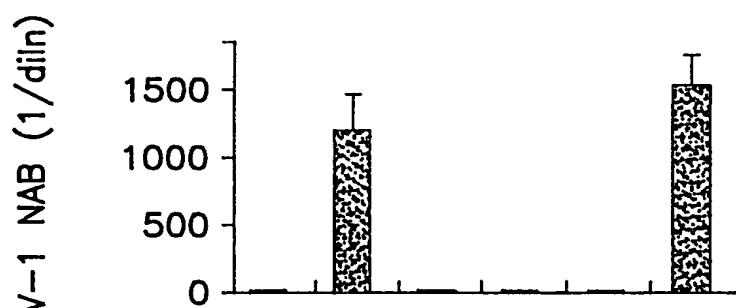
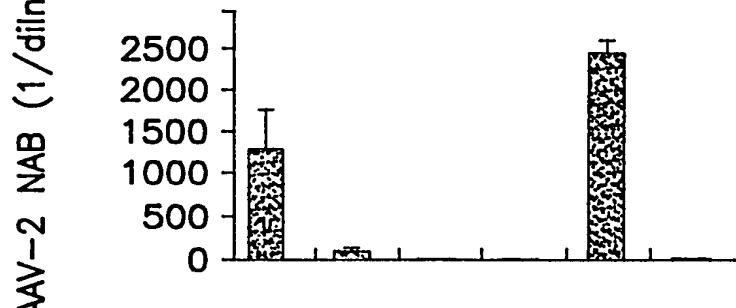


FIG. 6D



Group	1	2	3	4	5	6
Vector1 - $\alpha 1AT$	AAV2	AAV1	PBS	PBS	AAV2	AAV1
Vector2-EPO	AAV2	AAV1	AAV2	AAV1	AAV1	AAV2